

What is claimed is:

1. A print head comprising:
a cavitation layer formed by an atomic layer deposition process.
2. The print head of claim 1, wherein the cavitation layer is tantalum, titanium, molybdenum, or niobium.
3. A fluid-ejection device comprising:
a die having a plurality of layers formed thereover;
a firing chamber formed from the plurality of layers, from which heated fluid is ejected, wherein a first layer of the plurality of layers is a cavitation layer of the firing chamber that is formed by atomic layer deposition.
4. The fluid-ejection device of claim 3, wherein a second layer of the plurality of layers is a passivation layer that is formed by atomic layer deposition.
5. The fluid-ejection device of claim 4, wherein the passivation layer contains at least one of refractory metals, transitional metals, insulators, metal oxides, nitrides, borides, and carbides.
6. The fluid-ejection device of claim 4, wherein the passivation layer is silicon carbide or diamond-like-carbon.
7. The fluid-ejection device of claim 4, wherein the passivation layer comprises plurality of passivation layers.
8. The fluid-ejection device of claim 4, wherein the passivation layer has a thickness of between about 250 angstroms and about 500 angstroms.

9. The fluid-ejection device of claim 4, wherein the cavitation layer has a thickness of about 500 angstroms.
10. A print head comprising:
 - a die;
 - a firing chamber disposed upon the die, the firing chamber comprising an ALD cavitation layer;
 - a heating element interposed between the die and the firing chamber; and
 - an ALD passivation layer interposed between the heating element and the firing chamber.
11. The fluid-ejection device of claim 10, wherein the ALD passivation layer comprises a silicon nitride layer and a silicon carbide layer.
12. A fluid-ejection device comprising:
 - a die;
 - a firing chamber disposed upon the die, the firing chamber comprising a cavitation layer formed by atomic layer deposition;
 - a heating element interposed between the die and the firing chamber; and
 - a dielectric film, interposed between the heating element and the cavitation layer, wherein the dielectric film is formed by atomic layer deposition.
13. The fluid-ejection device of claim 12, wherein the dielectric film comprises a plurality of dielectric layers.

14. The fluid-ejection device of claim 13, wherein at least one of the plurality of dielectric layers is of silicon carbide and at least another of the plurality of dielectric layers is of silicon nitride.
15. The fluid-ejection device of claim 12, wherein the dielectric film is diamond-like carbon or silicon carbide.
16. The fluid-ejection device of claim 12, wherein the dielectric film has a thickness of between about 250 angstroms and about 500 angstroms.
17. The fluid-ejection device of claim 12, wherein the cavitation layer has a thickness of about 500 angstroms.
18. The fluid-ejection device of claim 12, wherein at least one of the cavitation layer and the dielectric film comprises a dopant.
19. A method of forming a cavitation layer of a print head, the method comprising:
utilizing an atomic layer deposition process.
20. The method of claim 19, wherein a material for the cavitation layer is tantalum, titanium, molybdenum, or niobium or comprises a dopant.
21. A method of fabricating a fluid-ejection device comprising:
utilizing an atomic layer deposition process to deposit a seed layer; and
forming a second layer on the seed layer.

22. The method of claim 21, wherein the seed layer is deposited on a passivation layer.
23. The method of claim 22, further comprising forming the passivation layer using an atomic layer deposition process.
24. The method of claim 21, wherein the seed layer is a tungsten, titanium nitride, or tantalum nitride layer.
25. A method of fabricating a fluid-ejection device comprising:
forming a firing chamber, for ejecting fluid therefrom, on a substrate, wherein forming the firing chamber comprises forming a cavitation layer using atomic layer deposition.
26. The method of claim 25, further comprising forming a plurality of passivation layers on the substrate before forming the firing chamber, wherein the cavitation layer is formed on the plurality of passivation layers.
27. The method of claim 25, further comprising forming a passivation layer on the substrate using atomic layer deposition before forming the firing chamber, wherein the cavitation layer is formed on the passivation layer.
28. A method of manufacturing a print head comprising:
forming a plurality of layers over a substrate;
forming a dielectric film over the plurality of layers using atomic layer deposition; and
forming a firing chamber, for ejecting fluid therefrom, over the dielectric film, wherein forming the firing chamber comprises forming a cavitation layer using atomic layer deposition.

29. The method of claim 28, wherein forming a dielectric film over the plurality of layers comprises forming a carbide film.
30. The method of claim 28, wherein forming a dielectric film over the plurality of layers comprises forming the dielectric film from a plurality of dielectric layers.
31. The method of claim 30, wherein forming the dielectric film from a plurality of dielectric layers comprises forming at least one of the plurality of dielectric layers from silicon carbide and at least another of the plurality of dielectric layers from silicon nitride.
32. The method of claim 28 wherein forming the dielectric film over the plurality of layers using atomic layer deposition comprises adding a dopant to the dielectric film using atomic layer deposition.
33. The method of claim 28 wherein forming a cavitation layer using atomic layer deposition comprises adding a dopant to the cavitation layer using atomic layer deposition.
34. The method of claim 28, wherein forming the plurality of layers further comprises:
forming a seed layer using atomic layer deposition; and
forming an aluminum layer on the seed layer.